REMARKS/ARGUMENTS

Claim 9 is amended, Claims 1-8 and 10-23 remain unchanged.

Lack of Unity under PCT Rule 13.1

Reconsideration of the lack of unity requirement is requested.

In the office action of 7/22/2008, it was suggested that claims 1-23 are subject to lack of unity requirement under PCT rule 13.1. Applicant is required to elect a single "gelling agent", a single "non-swelling polymer" a single "conjugation agent", a single "coating polymer" and a single "water soluble compound"

Applicant elects provisionally the presence of the following:

"Gelling agent": Hydroxypropylmethylcellulose in claim 3

"Non-swelling polymer": poly(ethyl acrylate, methyl methacrylate, trimethylammonioethyl methacrylate chloride) 1:2:0.1, commerced as Eudragit RS 100, in claim 4

"Conjugation agent" : sodium lauryl sulphate in claim 5

"Coating polymer": Poly(butyl methacrylate, (2-dimethyl aminoethyl) methacrylate, methyl methacrylate) 1:2:1 copolymer, commercially available as Eudragit E.RTM, in claim 12

"Water soluble compound" : low viscosity hydroxypropylmethyl cellulose in claim 9.

Claims 1-23 are elected. These elections are made with traverse.

According to PCT rule 13.1 "The international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept". Observance of this requirement is checked and determined by the International Searching Authority. (See MPEP 1850-I). "---The decision with respect to unity of invention rests with the International Searching Authority or the International Preliminary Examining Authority----." However, the International Searching Authority---- should not raise objection of lack of unity of invention merely because the inventions claimed are classified in separate classification groups or merely for the purpose of restricting the international search to certain classification groups" (See MPEP 1850-II)

A. Lack of unity was not indicated in the written opinion of the international searching authority (see attached International Search Report).

B. Similarly, lack of unity was not raised in the corresponding European application 03386019.8, which is now an issued patent EP1502587, priority of which was claimed in the present invention (see attached EPO Search report).

C. Furthermore, "Unity has to be considered in the first place only in relation to the independent claims in an international application and not the depended claims" (MPEP 1850-II). In the present invention lack of unity was raised with respect to dependent claims 3, 4, 5, 12, 9.

D. Regarding claim 3, all listed chemical compounds are grouped as being gelling agents, i.e., they have the same common property and activity. Also, all listed compounds are polymers , i.e., a common structure is present, i.e., a significant structural element is shared by all of the alternatives.

According to MPEP 1850-III B, in situations involving a "Markush" grouping of alternative chemical compounds, they shall be regarded as being of similar nature where the following criteria are fulfilled:

All alternatives have common property or activity; and
A common structure is present, i.e., a significant structural element is shared by all elements;

Since all elements listed in claim 3 have the same function/activity (gelling agents) and a common structure (polymer) is present, they should be regarded as being of similar nature.

It was argued that Hydroxypropylmethylcellulose is a semi synthetic inert viscoelastic polymer also used in ophthalmology as semi synthetic substitute for tear films whereas alginate is a gum extracted from the cell walls of brown algae also used in food industry.

However, Hydroxypropylmethylcellulose is also used in the food industry as a food gum, an emulsifier, thickening and suspending agent and as an alternative to animal gelatin (see attached Methocel reference from Dow Chemical Co). Similarly, alginate is a viscous gum, has a polymeric structure (linear copolymer) and is used in the food industry for thickening soups and jellies (see attached Alginates reference from FMC BioPolymer). Since both compounds have the same function/activity and a common structure they should be regarded as being of similar nature for the purposes of PCT Rule 13.1.

E. Regarding claim 4, all listed chemical compounds are grouped as being non-swelling polymers, i.e., they have the same common property and activity (non-swelling) and a common structure is present (polymer). Since both compounds have the same function/activity and a common structure they should be regarded as being of similar nature for the purposes of PCT Rule 13.1.

F. Regarding claim 5, all listed chemical compounds are grouped as being conjugation agents, i.e., they have the same common property and activity (conjugation) and a common structure is present (sulphate). Since both compounds have the same

function/activity and a common structure they should be regarded as being of similar nature for the purposes of PCT Rule 13.1.

G. Regarding claim 12, all listed chemical compounds are grouped as being coating materials, i.e., they have the same common property and activity (coating) and a common structure is present (polymer) . Since both compounds have the same function/activity and a common structure they should be regarded as being of similar nature for the purposes of PCT Rule 13.1.

In view of the above mentioned points A-G, it is believed that the "lack of unity" requirement under PCT Rule 13.1 is improper in the present case. Reconsideration and withdrawal of the lack of unity requirement are requested. Request of examination on the merits of all claims 1-23 is requested.

PETITION FOR EXTENSION OF TIME

Pursuant to 37 C.F.R. $1.136(a), Applicant hereby petitions that the period for response to Examiner's action mailed July 22, 2008, be extended for three months to and including November 22, 2008. Attached is a credit card form for the payment of the required fee.

If this response is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 781-235-4407

Respectfully submitted,

/Aliki K. Collins, Reg. No: 43,558/

Aliki K. Collins, Ph.D.
Reg. No. 43,558

AKC Patents, 215 Grove Street, Newton, MA 02466
TEL: 781-235-4407, FAX: 781-235-4409

Certificate of Mailing

Date of Deposit 11/21/2008

Name: Aliki K. Collins, Ph.D. Signature /Aliki K. Collins, Reg. No: 43,558/

I hereby certify under 37 CFR 1.10 that this correspondence is being electronically at the USPTO on the date indicated above and is addressed to the Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/GR2004/000039	International filing date *(day/month/year)* 23 July 2004 (23.07.2004)	Priority date *(day/month/year)* 30 July 2003 (30.07.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant PHARMATHEN S.A.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☒	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 30 January 2006 (30.01.2006)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Athina Nickitas-Etienne
Facsimile No. +41 22 740 14 35	Telephone No. +41 22 338 89 95

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

3/12

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/GR2004/000039	23.07.2004	30.07.2003

International Patent Classification (IPC) or both national classification and IPC
A61K9/48, A61K31/137

Applicant
PHARMATHEN S.A.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:

European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Muller, S

Telephone No. +31 70 340-2080

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was field, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ in written format

   ☐ in computer readable form

   c. time of filing/furnishing:

   ☐ contained in the international application as filed.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. II Priority

1. ☒ The following document has not been furnished:

   ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

   ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

   Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-23
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-23
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-23
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Cited Documents

The following documents are referred to in this communication:

D1: WO 99/22724 A (AMERICAN HOME PROD) 14 May 1999 (1999-05-14)

D2: WO 03/013480 A (DESHMUKH ABHIJIT MUKUND ;DHANORKAR VIPIN TATYASAHEB (IN); KOLHE UJ) 20 February 2003 (2003-02-20)

2. Novelty (Art. 33(2) PCT)

The document D1 discloses (see example 1 on page 7) a hard gelatin capsule containing spheroids which are made by wet granulation and which comprise a core with venlafaxine HCl as well as a coating layer controlling the drug release. As D1 does not mention the formation of mini-tablets, the subject-matter of claims 1-23 appears therefore to be new (Article 33(2) PCT).

3. Inventive Step (Art. 33(3) PCT)

D1 is considered as being the closest prior art. It discloses a hard gelatin capsule containing spheroids which are made by wet granulation and which comprise a core with venlafaxine HCl as well as a coating layer controlling the drug release.
The current application differs from D1 in that it discloses mini-tablets instead of spheroids.
The objective problem of the application may therefore be regarded as an alternative sustained release formulation of the water-soluble drug venlafaxine HCl comprising a hard gelatin capsule.
It appears that the person skilled in the art would not have made mini-tablets instead of spheroids in view of D1, since the formation of mini-tablets involves additional, different process steps (e.g compression) for solving the abovementioned problem.
Therefore the subject-matter of claims 1-23 appears to be inventive over the prior art (Article 33(3) PCT).

4. Industrial applicability (Art. 33(4) PCT)

Claims 1-23 satisfy the criterion of industrial applicability set forth in Article 33(4) PCT.

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Europäisches Patentamt	European Patent Office	Office européen des brevets
Zweigstelle in Den Haag Recherchen-abteilung	Branch at The Hague Search division	Département à La Haye Division de la recherche

Koriatopoulou, Pierrina S.
16, Akademias Street
106 71 Athens
GRECE

Datum/Date
12.12.03

Zeichen/Ref./Réf.	Anmeldung Nr./Application No./Demande n°./Patent Nr./Patent No./Brevet n°.
	03386019.8-1219-

Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire
Pharmathen S.A.

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☒ abstract ☐ title

☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract: NONE

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 38 6019

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A,D	WO 99 22724 A (AMERICAN HOME PROD) 14 May 1999 (1999-05-14) * page 7; example 1 *	1-22	A61K9/48 A61K31/137
X	WO 03 013480 A (DESHMUKH ABHIJIT MUKUND ;DHANORKAR VIPIN TATYASAHEB (IN); KOLHE UJ) 20 February 2003 (2003-02-20) * page 11, line 10 - line 27 *	23	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A61K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	28 November 2003	Muller, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 38 6019

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-11-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9922724 A	14-05-1999	AT 237320 T	15-05-2003
		AU 747978 B2	30-05-2002
		AU 1300399 A	24-05-1999
		BG 104397 A	28-02-2001
		BR 9813179 A	22-08-2000
		CA 2305242 A1	14-05-1999
		CN 1278165 T	27-12-2000
		CZ 20001659 A3	17-10-2001
		DE 69813602 D1	22-05-2003
		DE 69813602 T2	06-11-2003
		DK 1028718 T3	28-07-2003
		EE 200000212 A	16-04-2001
		EP 1028718 A2	23-08-2000
		HR 20000213 A1	31-12-2000
		HU 0004287 A2	29-04-2002
		JP 2001521892 T	13-11-2001
		NO 20002126 A	04-05-2000
		NZ 504460 A	31-01-2003
		PL 341141 A1	26-03-2001
		PT 1028718 T	31-07-2003
		SI 1028718 T1	31-08-2003
		SK 6472000 A3	07-11-2000
		TR 200001232 T2	21-12-2000
		WO 9922724 A2	14-05-1999
		US 2002197307 A1	26-12-2002
		US 2003215507 A1	20-11-2003
		US 6274171 B1	14-08-2001
		US 2001055612 A1	27-12-2001
		US 2002025339 A1	28-02-2002
		ZA 9810081 A	04-05-2000
WO 03013480 A	20-02-2003	WO 03013480 A1	20-02-2003

EPO FORM P0459

The examination is being carried out on the **following application documents**:

Text for the Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR LI

Description, pages:

1-23 as originally filed

Claims, No.:

1-23 as originally filed

1. Cited Documents

The following documents (D1,D2) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: WO 99 22724 A (AMERICAN HOME PROD) 14 May 1999 (cited by the applicant)

D2: WO 03 013480 A (DESHMUKH ABHIJIT MUKUND ;DHANORKAR VIPIN TATYASAHEB (IN); KOLHE UJ) 20 February 2003

2. Major Objection (Art. 84 EPC)

The term "strength" as used in claim 20 has no well-recognised meaning and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definintion of the subject-matter of said claims unclear (Article 84 EPC). The applicant is therefore invited to delete claim 20 and to amend the description (page 1) accordingly.

3. Novelty (Art. 54 EPC)

The document D2 discloses (see page 11, lines 10-27) a process comprising: a) preparing mini-tablet cores by wet granulation, drying and compression process, b) applying a coating layer onto the cores, and c) encapsulating the mini-tablets. The subject-matter of claim 23 is therefore not new (Article 54(1) and (2) EPC).

The document D1 discloses (see example 1 on page 7) a hard gelatin capsule containing spheroids which are made by wet granulation and which comprise a core with venlafaxine HCl as well as a coating layer controlling the drug release. As D1 does not mention the formation of mini-tablets, the subject-matter of claims 1-22 appears therefore to be new (Article 54(1) and (2) EPC).

4. Inventive Step (Art. 56 EPC)

The subject-matter of claim 23 not being new in view of D2 is therefore also not inventive (Art. 56 EPC).

D1 is considered as being the closest prior art. It discloses a hard gelatin capsule containing spheroids which are made by wet granulation and which comprise a core with venlafaxine HCl as well as a coating layer controlling the drug release.
The current application differs from D1 in that it discloses mini-tablets instead of spheroids.
The objective problem of the application may therefore be regarded as an alternative sustained release formulation of the water-soluble drug venlafaxine HCl comprising a hard gelatin capsule.
It appears that the person skilled in the art would not have made mini-tablets instead of spheroids in view of D1, since the formation of mini-tablets involves additional, different process steps (e.g compression) for solving the abovementioned problem.
Therefore the subject-matter of claims 1-22 appears to be inventive over the prior art (Article 56 EPC).

5. Further Remarks

Claim 12 should be amended as the non-swellable polymers are recited in claim 4 (and

not in claim 3, see line 5).

6. Amendments

The applicant is requested to file new claims which take account of the above comments.

When filing amended claims the applicant should at the same time bring the description into conformity with the amended claims. Care should be taken during revision, especially of the introductory portion and any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 123(2) EPC).

In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123(2) EPC, the applicant is requested to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based.

If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.

METHOCEL Cellulose Ethers
resources

Chemistry

Typical Chemical Structures of METHOCEL Products

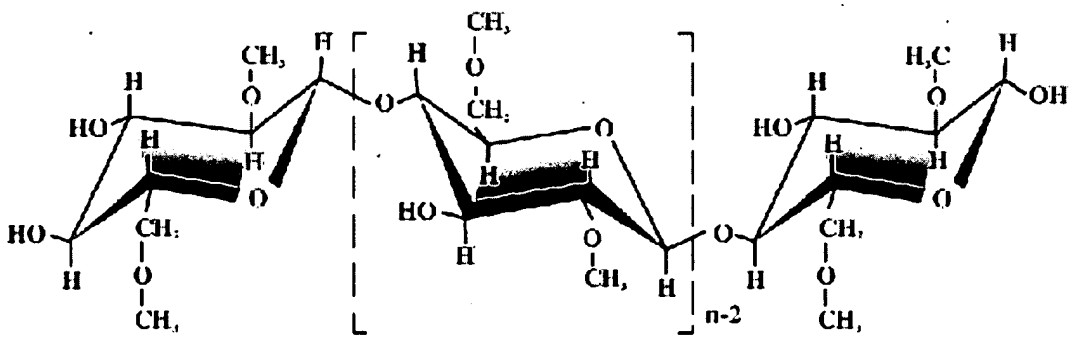
METHOCEL* cellulose ether products are available in two basic types: methylcellulose and hypromellose†. Both types of METHOCEL have the polymeric backbone of cellulose, a natural carbohydrate that contains a basic repeating structure of anhydroglucose units (see the figure below). During the manufacture of cellulose ethers, cellulose fibers are heated with caustic solution which in turn is treated with methyl chloride, yielding the methyl ether of cellulose. The fibrous reaction product is purified and ground to a fine, uniform powder.

METHOCEL

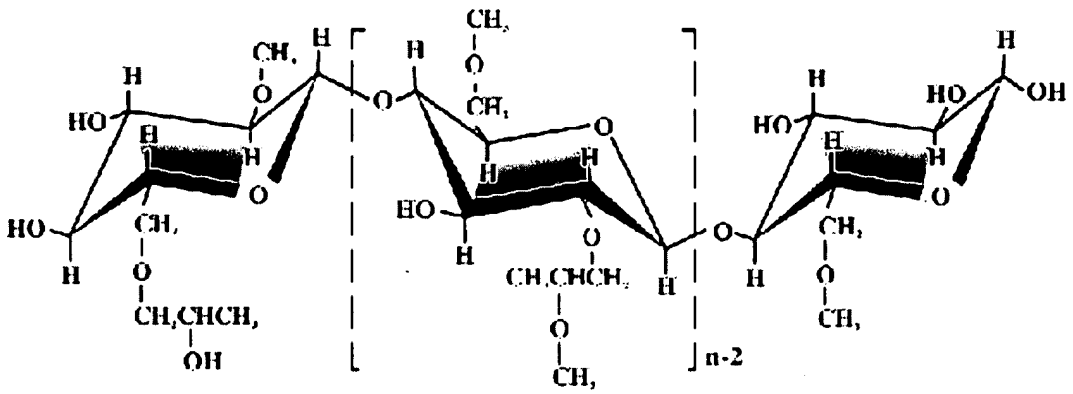
Building Materials
Food Products
Personal Care Products
Pharmaceuticals
Other Applications
Resources
> Quality Assurance and Certifications
> News and Events
> Chemistry
> Handling Considerations
Where To Buy
Online Support

Methylcellulose is made using only methyl chloride. These are METHOCEL A brand products. For hypromellose products (METHOCEL E, F, J, and K brand products), propylene oxide is used in addition to methyl chloride to obtain hydroxypropyl substitution on the anhydroglucose units. This substituent group, -OCH2CH(OH)-CH3, contains a secondary hydroxyl on the number two carbon and may also be considered to form a propylene glycol ether of cellulose. These products possess varying ratios of hydroxypropyl and methyl substitution, a factor which influences organic solubility and the thermal gelation temperature of aqueous solutions.

Methylcellulose - METHOCEL A Products



Hypromellose - METHOCEL E, F, J, K, and 40- Series products



There are also special-grade METHOCEL products available that have been formulated to meet the requirements of specific industries.

Degree of Substitution

The amount of substituent groups on the anhydroglucose units of cellulose can be designated by weight percent or by the average number of substituent groups attached to the ring, a concept known to cellulose chemists as "degree of substitution" (D.S). If all three available positions on each unit are substituted, the D.S. is designated as 3, if an average of two on each ring are reacted, the D.S. is designated as 2, etc.

The number of substituent groups on the ring determines the properties of the various products. METHOCEL A cellulose ether contains 27.5 to 31.5% methoxyl, or a methoxyl D.S. of 1.64 to 1.92.

In the METHOCEL E, METHOCEL F, and METHOCEL K cellulose ether products, the methoxyl substitution is still the major constituent (see the table below). The molar substitution (MS) reports the number of moles of hydroxypropyl groups per mole of anhydroglucose. In the METHOCEL J and 310-Series products, the hydroxypropyl substitution is about 50% of the total substitution.

Table 5: Degree of Substitution for METHOCEL Products

Product	Methoxyl Degree of Substitution	Methoxyl %	Hydroxypropyl Molar Substitution	Hydroxypropyl %
METHOCEL A	1.8	30	--	--
METHOCEL E	1.9	29	0.23	8.5
METHOCEL F	1.8	28	0.13	5.0
METHOCEL J	1.3	18	0.82	27
METHOCEL K	1.4	22	0.21	8.1
METHOCEL 310 Series	2.0	25	0.8	25

†Previously referred to as hydroxypropyl methylcellulose or HPMC.

METHOCEL Food Products

Formed/Extruded Foods

METHOCEL* food gums help structured products keep their shape through processing, cooking, shipping, storage, repeated freeze/thaw cycles, and final preparation for serving. Low concentrations give ideal binding performance and won't give products a "starchy" texture. METHOCEL gums also aid in extrusion and improve release properties in other forming processes.

Our newer SuperGelling METHOCEL food gums provide excellent binding and replace many other binders, including egg white. They enable outstanding texture development with excellent succulence/juiciness.

Products absorb less oil during frying and retain more of their natural moisture.

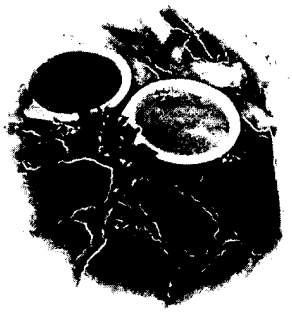
FOOD PRODUCTS

Food Applications
Product Line Overview
Resource Center
Where To Buy
Online Support
Order Samples Online

Site Navigation: | METHOCEL Home: METHOCEL Food Products: Formed/Extruded Foods

METHOCEL Food Products

Food Products



Fried Foods - METHOCEL* Food Gums give batters more uniform coating and adhesion to food substrates. During frying, they help reduce batter blowoff, oil absorption, and moisture loss. And they help keep batters on food products during frozen storage.

Other Applications ▶
Product Line Overview
Resource Center
Where To Buy
Online Support
Order Samples Online

Site Navigation: | METHOCEL Home: METHOCEL Food Products

METHOCEL Food Products

Soups/Sauces/Gravies

METHOCEL* food gums are an excellent choice for getting the most out of processing and serving hot, thick liquids. They hydrate rapidly and are excellent thickeners and stabilizers. METHOCEL gums provide velvety texture and stability for restaurant style soups and sauces. They add emulsification to prevent oil pooling during shelf-life. METHOCEL gums also provide unique thermal processing flexibility, yielding superior garnish integrity and productivity gains.

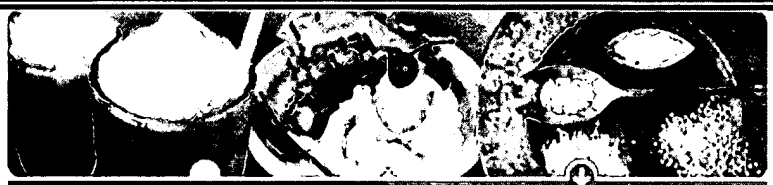
FOOD PRODUCTS

Food Applications
Product Line Overview
Resource Center
Where To Buy
Online Support
Order Samples Online

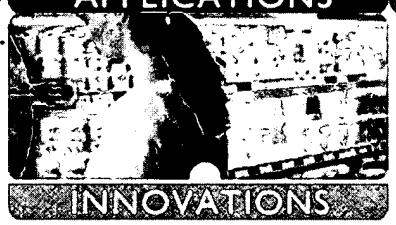
If you choose, you can delay the hydration of METHOCEL gums to lower pumping viscosities and improve processing efficiency.

During serving, METHOCEL gums provide steam table stability and add body. They offer excellent stability across a wide range of temperature abuse common in food services. Sauces can get a "hot cling" feature with the thermally-gelling nature of METHOCEL gums.

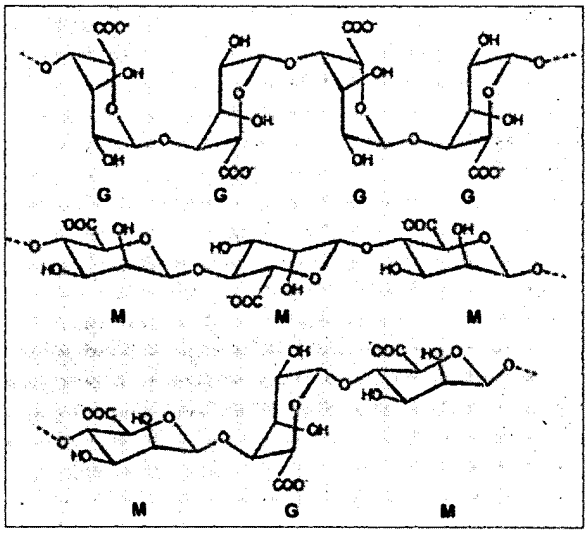
Site Navigation: | METHOCEL Home: METHOCEL Food Products: Food Applications - Soups/Sauces/Gravies



FMC BioPolymer
Know how it works.



Alginates / PGA



Alginate is classified as a hydrocolloid (a water-soluble biopolymer of colloidal nature when hydrated). The first scientific studies on the extraction of alginates from brown seaweed were made by the British chemist E.C. Stanford at the end of the 19th century, and the large-scale production of alginate was introduced 50 years later. Alginate is one of the most versatile biopolymers and is used in a wide range of food, pharmaceutical and specialty applications for:

- Thickening
- Stabilizing
- Gelling
- Film forming

Today, FMC BioPolymer is among the world's largest alginate manufacturers. Together with our carrageenan and cellulose gel (microcrystalline cellulose) we offer a full range of functionalities and capabilities to assist formulators in creating and launching innovative products and systems.

FMC BioPolymer
Know how. It works.™

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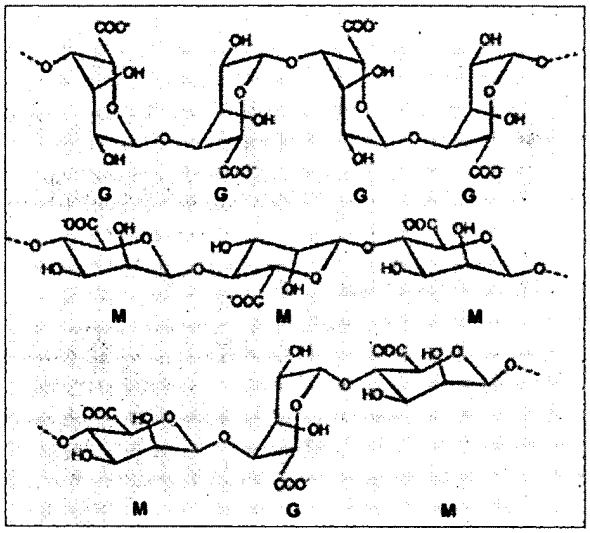

FOOD

Application	Type of Alginate	Functions and Benefits
Bakery Creams	Protanal®	■ Instant gelling and thickening; heat stability; range of different textures; good mouthfeel and flavor release
Dressings	Protanal Ester	■ Thickening, stabilizing, emulsifying; good mouthfeel; acid stable
Fruit Juices	Protanal Ester	■ Stabilizing, emulsifying
Fruit Fillings and Preparations	Protanal	■ Gelling, thickening, stabilizing; prevents syneresis; excellent heat stability; cold and hot process; wide range of different textures; available for low to high brix systems
Ice Cream and Sorbet	Protanal	■ Stabilizing; controlled viscosity; prevents crystal formation and shrinkage; contributes to even and slow meltdown
Low Fat Spreads	Protanal	■ Stabilizing; good mouthfeel, texture and flavor release
Restructured Foods	Protanal	■ Excellent gelling ability; heat stability; easy to form
Yogurt	Protanal	■ Stabilizing; good mouthfeel, texture and flavor release

SPECIALTY

Application	Type of Alginate	Functions and Benefits
Beer	Profoam®	■ Improves and maintains foam levels
Petfoods	Protanal	■ Gelling of heat-resistant and retortable meat-like chunks
Textile Printing	Lamitex,®	■ Gives the desired rheology to print pastes; is inert to dyes

Textile Printing	Scotex®	and fibers; has excellent wash-out properties; is extremely pure
Paper	Scogin®	■ Enhance greaseproof properties, oil resistance, and solvent holdout; improves rheology, water-retention, runability, ink holdout, and printability
Welding	Protaweld™	■ Lubricant stabilizer and "green strength" agent in the extrusion of high quality welding rods

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